

**ELECTRICIAN  
WG-2805-10**

**OPERATIONS  
WORKCENTER**

**I. POSITION AND ORGANIZATION INFORMATION****Position:**

Electrician, WG-2805-10

**Purpose of position:**

The primary purpose of this job is to install, repair, troubleshoot, and maintain various electrical systems, controls, and equipment.

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**Organization:**

Building Trades Br., Maintenance Div.

**Organization goals:**

The purpose of this branch is to provide emergency and scheduled maintenance and repair services.

**II. MAJOR DUTIES****A. Duty (Critical):**

Installs, repairs or replaces, modifies, loads, and tests new and existing electrical lines, circuits, systems, fixtures, panels, switches, breakers, and controls located in and near installation buildings and structures. Works on secondary distribution lines and circuits used to supply distribution panels, switchgears, power and control circuits, electrical intrusion alarm and fire alarm systems; emergency warning systems; cathodic protection systems; high intensity lighting systems; and related equipment. Tests and maintains gasoline and diesel generators for proper electrical output. Trains and/or guides lower grade or lesser experienced employees as required. (25%)

**Tasks:**

1. Plans tasks and determines appropriate steps and actions necessary to complete the project or job.
2. Adheres to the National Electrical Code and keeps abreast of changes to the Code.

**Selected Staffing KSAs:**

A1, A2, A3, A4, A5, A6, A7, A8

**B. Duty (Critical):**

Troubleshoots problem areas and inspects for defective equipment and faulty wiring. Works from building plans, blueprints, wiring diagrams, engineering drawings, and maintenance and repair manuals to determine the necessary and proper repairs and/or replacements. (25%)

**Tasks:**

1. Makes repairs or replaces defective equipment.
2. Ensures electrical systems are maintained in optimum operational condition.

**Selected Staffing KSAs:**

A1, A2, A3, A4, A5, A6, A7, A8

**C. Duty (Critical):**

Uses and maintains various types of hand and/or power tools, such as screwdrivers, pliers, wire cutters, soldering irons, cable pullers, hydraulic benders, and pipe threading machines. In addition, uses a wide variety of test equipment, including test lamps, multimeters, circuit analyzers, circuit breaker testers, voltage recording meters, meggers, watt meters, ohmmeters, and ammeters. (25%)

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**Tasks:**

1. Uses, maintains, and accounts for all types of hand and/or power tools required to accomplish assigned duties.

**Selected Staffing KSAs:**

A1, A2, A3, A4, A5, A6, A7, A8

**D. Duty (Critical):**

Utilizes safety practices and procedures following established safety rules and regulations and maintains a safe and clean work environment. Uses and assures proper fit of required safety equipment and clothing. (25%)

**Tasks:**

1. Operates equipment in a safe manner, applying established safety rules and regulations to minimize minor violations and to avoid major violations due to employee error or negligence.
2. Informs the supervisor of any accidents and/or damages to supplies or equipment or of any observed unsafe practices and/or procedures in accordance with established policies and procedures

**Selected Staffing KSAs:**

A1, A2, A3, A4, A5, A6, A7, A8

**E. Other Work Requirements**

1. The employee may be required to work overtime.
2. The employee may be recalled to duty.
3. This position requires the employee to drive a motor vehicle. An appropriate, valid driver's license is required for the position.

**III. KNOWLEDGES, SKILLS AND ABILITIES (KSAs)**

**A. Selected Staffing KSAs:**

1. Knowledge of safety regulations, practices, and procedures.
2. Knowledge of technical practices in order to plan, lay out, install, modify, troubleshoot, and repair a variety of complete systems.
3. Knowledge of electrical and electronic theory and instruments used in shop and trade practices.

4. Knowledge of electrical equipment, i.e., test lamps, multimeters, circuit analyzers, circuit breaker testers, voltage recording meters, meggers, watt meters, ohmmeters, and ammeters.
  5. Skill in using and maintaining hand tools such as, screwdrivers, pliers, wirecutters, strippers, cable pullers, drills, soldering irons, and manual or power conduit benders and threaders.
  6. Skill in troubleshooting and tracing hard-to-locate defects or problems.
  7. Ability to use electrical drawings, blueprints, engineering drawings, and wiring diagrams.
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8. Ability to install, troubleshoot, repair, and maintain various electrical systems, controls, and equipment without more than normal supervision.

#### B. Basic Training Competencies:

1. Knowledge of safety regulations, practices, and procedures.
2. Knowledge of technical practices in order to plan, lay out, install, modify, troubleshoot, and repair a variety of complete systems.
3. Knowledge of electrical and electronic theory and instruments used in shop and trade practices.
4. Knowledge of electrical equipment, i.e., test lamps, multimeters, circuit analyzers, circuit breaker testers, voltage recording meters, meggers, watt meters, ohmmeters, and ammeters.
5. Skill in using and maintaining hand tools such as, screwdrivers, pliers, wirecutters, strippers, cable pullers, drills, soldering irons, and manual or power conduit benders and threaders.
6. Skill in troubleshooting and tracing hard-to-locate defects or problems.
7. Ability to use electrical drawings, blueprints, engineering drawings, and wiring diagrams.
8. Ability to install, troubleshoot, repair, and maintain various electrical systems, controls, and equipment without more than normal supervision.

#### IV. CLASSIFICATION FACTORS

##### Factor 1. Knowledge

1. -- Knowledge of electrical principles including how various circuits, equipment, and controls fit and work together.
- Knowledge of the various gauges, sizes, and types of wire, conduit, coupling, fittings, relays, boxes, circuit breakers, and other electrical devices, and ability to arrange and install them in ways that insure safe and proper operation of electrical systems and equipment.
- Ability to interpret and apply blueprints, schematics, wiring diagrams, engineering drawings, technical manuals, National Electrical Code, National

Fire codes, local codes, and to use trade formulas to calculate common properties.

-- Practical knowledge of electronic principles to troubleshoot electrical circuits containing electronic components.

-- Skill in installing and rearranging old or new outlets, relays, switches, and light fixtures.

-- Skill in the use of hand tools, portable power tools, and a wide variety of test equipment.

-- Ability to test completed circuits for functionality after repair or installation.

-- Skill in troubleshooting and tracing hard-to-locate defects or problems.

#### **Factor 2. Responsibility**

Works from building plans, wiring diagrams, and engineering drawings. Independently plans and lays out work, tracing hard-to-locate defects or problems and completing repairs and installations with little or no technical advice. Supervisor checks overall work to ensure timelines and compliance with accepted trade standards.

#### **Factor 3. Physical Effort**

Makes repairs from work stands and other hard-to-reach places. Must stand, stoop, bend, kneel, climb, stretch, and work in tiring and uncomfortable positions. Frequently lifts parts and equipment that weigh up to 20 pounds. Occasionally lifts items that weigh over 40 pounds with assistance from other workers.

#### **Factor 4. Working Conditions**

Works both inside and outside, sometimes in bad weather and in areas that are noisy, dirty, dusty, and greasy. May work on scaffolding or cranes at heights of 30 or more feet, or in close quarters such as manholes or attics. Subject to electric shock, cuts, and bruises. May be exposed to temperature extremes in test facilities, extremely high noise levels, and exposure to lead, radiation, chemicals, or carcinogens.

## V. CLASSIFICATION SUMMARY

## In this position:

Duty A. 25% WG-2805-10 Electrician  
Installs, Repars, and Tests

Duty B. 25% WG-2805-10 Electrician  
Troubleshoots Problems

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Duty C. 25% WG-2805-10 Electrician  
Uses Tools

Duty D. 25% WG-2805-10 Electrician  
Utilizes Safety Practices

OPM Job Grading Standard for Electrician, WG-2805, TS-55 dated June 1989.

Grade: WG-10